

212/560

In the claims:

1. (Currently Amended) An apparatus adapted for removing gas bubbles from blood comprising:
 - an axially elongate shell defining a chamber;
 - an impeller disposed within the chamber;
 - a motor operably connected to the impeller;
 - a gas vent in fluid communication with the central axis of the shell;
 - a blood inlet port; and
 - a blood outlet port located at the radial periphery of said shell.
2. (Original) The apparatus of Claim 1 wherein said blood inlet port is positioned tangentially to said shell.
3. (Original) The apparatus of Claim 1 wherein said shell includes an axially elongate baffle interposed between the chamber and the gas vent.
4. (Original) The apparatus of Claim 1 wherein said motor is electrically driven.
5. (Currently Amended) The apparatus of Claim 1 wherein said motor and impeller are operable to rotate the impeller at a rate of approximately 100 to 10,000 RPM.
6. (Original) The apparatus of Claim 1 wherein said gas vent is connected to a gas pump.

212/560

7. (Original) The apparatus of Claim 1 wherein said blood outlet port comprises a screen or mesh type particulate filter.

8. (Original) The apparatus of Claim 1 wherein said blood outlet port is positioned tangentially to said shell.

9. (Original) The apparatus of Claim 1 wherein the interior surfaces of said shell are coated with anti-thrombogenic materials.

10. (Original) The apparatus of Claim 1 wherein said blood inlet port is located higher than said blood outlet port.

11. (Original) The apparatus of Claim 1 wherein said blood inlet port is located lower than said blood outlet port.

12. (Original) The apparatus of Claim 1 wherein said gas vent is located higher than both said blood inlet port and said blood outlet port.

13. (Original) The apparatus of Claim 1 wherein said impeller is magnetically coupled to said motor drive.

14. (Original) The apparatus of Claim 1 wherein said impeller comprises a plurality of vanes to spin the blood.

15. (Original) The apparatus of Claim 1 wherein said impeller comprises a smooth outer surface to spin the blood using viscous effects.

16. (Original) The apparatus of Claim 1 wherein said gas vent further comprises a gas trap.

17 - 23. (withdrawn)

212/560

24. (New) An apparatus adapted for removing gas bubbles from blood comprising:

an axially elongate shell defining a chamber;

an impeller disposed within the chamber, wherein the impeller rotates about an axis concentric with the axis of the shell;

a motor operably connected to the impeller to cause the impeller to rotate about its axis;

a gas vent in fluid communication with central axis the shell

a blood inlet port; and

a blood outlet port located at the radial periphery of said shell;

wherein the blood inlet port receives blood that has been drained from a patient's body and the blood outlet port delivers blood back to a patient, wherein the blood delivered back to the patient has had air bubbles removed by the apparatus.

25. (New) The apparatus of Claim 24 wherein the motor is magnetically coupled to the impeller, wherein rotation of the impeller is driven across the shell.

26. (New) The apparatus of Claim 24 wherein the blood inlet port is operably connected to a cardiopulmonary bypass system.

27. (New) The apparatus of Claim 24 wherein the blood outlet port is operably connected to a cardiopulmonary bypass system.

212/560

28. (New) The apparatus of Claim 24 wherein the impeller actively spins the blood creating a centrifugal force on the blood, thereby collecting gas bubbles toward the center of the axially elongate shell.

29. (New) The apparatus of Claim 24 wherein a portion of the blood contained therein is removed through the blood outlet port located substantially along the radial periphery of said shell so as to minimize the gas bubble content of the blood at the blood outlet port.

30. (New) An apparatus adapted for removing gas bubbles from blood comprising:

an axially elongate chamber comprising a shell;

means for impelling rotation the blood within the chamber about the axis of the chamber, whereby gas in the blood is released and collected within the chamber;

means for venting the gas bubbles collected within the chamber; and

means for removing blood from the chamber, whereby at least a portion of the gas bubbles have been removed from the blood.